

REMARKS

The Office Action dated October 17, 2008, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Status of the Claims

Claims 1, 9, 11, 19, 21 and 23 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 22 and 24 have been canceled without prejudice or disclaimer. Thus, claims 1-21 and 23 are currently pending in the application and are respectfully submitted for consideration.

Rejections under 35 U.S.C. § 112

Claims 23 and 24 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. The Office Action alleged on page 2 that the present specification was not written in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the invention at the time the application was filed. Specifically, the Office Action alleged that "A computer program embodied on a computer-readable medium, which is configured to control a processor to perform the operation as described in claims 23-24 was not described in the original disclosure." Applicants respectfully traverse the rejection.

Some embodiments of the present invention are directed to a method for charging of data reaching a network element of a communication network during a data session.

Such operations are commonly understood by a person of ordinary skill in the art to be performed by a computing device having memory and a processor. Clearly, as is explicitly recognized by MPEP § 2106.01, memory is a computer-readable medium. Further, computer programs have been embodied on computer-readable media for decades. Consequently, it is undeniable that one skilled in the art of computing and networking would readily appreciate from reading the present specification that features of some embodiments of the present invention may be performed by a computer program embodied on a computer readable medium, such as memory, and that such a person would further readily appreciate that such a program, embodied on memory, is configured to control a processor to perform the claimed operations.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Claims 1-8 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the invention. More specifically, the Office Action took the position that “at a network element to be applied to reaching the network” as recited in claim 1 is “incomplete” and that as a result, “said data” lacks antecedent basis. Claim 1 has been amended to recite “enforcing a charging policy at a network element, wherein the charging policy is to be applied to data packets reaching the network element during a packet data protocol context”. Claim 1 has also been amended to replace “observing said data” with “observing the data packets”.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Rejection under 35 U.S.C. § 102

Claims 1, 11, 21 and 23 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Roberts (U.S. Publication No. 2003/0152039). The Office Action took the position on pages 3-6 that Roberts discloses all of the features of the rejected claims. Applicants respectfully submit that Roberts fails to disclose or suggest all of the features of the above-rejected claims. Reconsideration of the claims is respectfully requested.

Independent claim 1, from which claims 2-10 depend, recites a method including enforcing a charging policy at a network element. The charging policy is to be applied to data packets reaching the network element during a packet data protocol context, where the packet data protocol context includes a plurality of data flows, with each data flow being distinguishable by a set of flow parameters. The charging policy defines charging rules per flow of the plurality of flows. The method also includes observing the data packets reaching the network element, where the data packets each include at least one flow parameter, and detecting at least one data flow from flow parameters included in the observed data packets. The method further includes mapping each of the data packets to detected data flows in accordance with the at least one flow parameter included in the respective data packet. Additionally, the method includes matching the detected data flows to an enforced charging policy and applying the enforced charging policy to the data flows to generate charging information.

Independent claim 11, from which claims 12-20 depend, recites an apparatus including an enforcing unit configured to enforce a charging policy at a network element to be applied to data packets reaching the network element during a packet data protocol context, where the packet data protocol context includes a plurality of data flows, with each data flow of the plurality of data flows being distinguishable by a set of flow parameters. The charging policy defines charging rules per data flow of the plurality of flows. The apparatus also includes an observation unit configured to observe the data packets reaching the network element, where the data packets each include at least one flow parameter, and to detect at least one data flow from flow parameters included in the observed data packets. The apparatus further includes a mapping unit configured to map each of the data packets to detected data flows in accordance with the at least one flow parameter included in the respective data packet. Additionally, the apparatus includes a matching unit configured to match the detected data flows to an enforced charging policy, an application unit configured to apply the enforced charging policy to the data flows and a generation unit, responsive to the application unit, configured to generate charging information.

Independent claim 21 recites an apparatus including enforcing means configured to enforce a charging policy at a network element to be applied to data packets reaching the network element during a packet data protocol context, where the packet data protocol context includes a plurality of data flows, with each data flow of the plurality of data flows being distinguishable by a set of flow parameters. The charging policy defines

charging rules per data flow of the plurality of flows. The apparatus also includes observation means configured to observe the data packets reaching the network element, where the data packets each include at least one flow parameter, and to detect at least one data flow from flow parameters included in the observed data packets. The apparatus further includes mapping means configured to map each of the data packets to detected data flows in accordance with the at least one flow parameter included in the respective data packet. Additionally, the apparatus includes matching means configured to match the detected data flows to an enforced charging policy. application means configured to apply the enforced charging policy to the data flows and generation means, responsive to the application means, configured to generate charging information.

Independent claim 23 recites a computer program embodied on a computer-readable storage medium configured to control a processor to perform operations, including enforcing a charging policy at the network element to be applied to data packets reaching the network element during a packet data protocol context, where the packet data protocol context includes a plurality of data flows, with each data flow being distinguishable by a set of flow parameters. The charging policy defines charging rules per flow of the plurality of flows. The operations also include observing the data packets reaching the network element, where the data packets each include at least one flow parameter, and detecting at least one data flow from flow parameters included in the observed data packets. The operations further include mapping each of the data packets to detected data flows in accordance with the at least one flow parameter included in the

respective data packet. Additionally, the operations include matching the detected data flows to an enforced charging policy and applying the enforced charging policy to the data flows to generate charging information.

As will be discussed below, Roberts fails to disclose or suggest all of the features of the presently pending claims.

Roberts generally discusses “systems and methods for billing or tariffing users of a communications network for the use of network resources and services, and for the purchase of goods and services via the network” (paragraph [0002]). Roberts also discusses that each packet has an address and that the method includes “providing a set of rules, and determining from said set of rules and each packet address, a respective billing tariff and account for that packet” (see paragraph [0012]). “The billing costs are debited from the relevant customer account. Prepaid customers may have a zero credit limit. Postpaid customers may be accommodated in the system by allowing their accounts to go into debit e.g. to a prearranged limit” (paragraph [0013] of Roberts).

Independent claim 1 recites, in part, “enforcing a charging policy at a network element, wherein the charging policy is to be applied to data packets reaching the network element during a packet data protocol context, the packet data protocol context comprising a plurality of data flows, with each data flow being distinguishable by a set of flow parameters, wherein said charging policy defines charging rules per flow of the plurality of flows”, “observing the data packets reaching said network element, the data packets each including at least one flow parameter, and detecting at least one data flow

from flow parameters included in the observed data packets”, “mapping each of the data packets to detected data flows in accordance with the at least one flow parameter included in the respective data packet”, “matching said detected data flows to an enforced charging policy”, and “applying said enforced charging policy to said data flows to generate charging information”. Independent claims 11, 21 and 23, which each have their own scope, recite similar features. Applicants respectfully submit that Roberts fails to disclose or suggest these features.

Roberts discusses that URL/IP addresses and port numbers are used to differentiate data packets for billing, and that information regarding the protocol may also be used (see, for example, paragraphs [0021] and [0036]). In contrast, per the above, claim 1 recites data flows, where are inside data packets and identified by flow parameters. This is illustrated by the attached figure, which illustrates service flows reaching a terminal. The service flows belong to different services 1 . . . n having different charging rates 1 . . . n. With the increasing variety and qualities of services that a subscriber may subscribe to, charging and/or billing for services offered by the network may become rather complex. Thus, a new type of mediation functionality for charging that is capable of coping with additional requirements related to managing prepaid challenges may be beneficial. Such mediation functionality may control charging logic based on context and processing capabilities of collected charging information.

Applicants submit the following. In some embodiments of the present invention, this may be achieved as recited in the independent claims. In order to create charging

policies for access network devices, a flow definition is required. A data flow may be defined as a set of packets passing an observation point in the network during a certain time interval. A set of data flows (one or more) may correspond with the usage of a certain application or service differing from an application flow. Services may either use a single flow or multiple flows (for example, streaming or a rich call). All packets belonging to a particular data flow generally have a set of common properties (*i.e.* flow parameters) derived from the data contained in the packet and from the packet treatment at the observation point. Packets may be mapped to flows by evaluating packet properties (flow parameters). The data flows are matched to an enforced charging policy, and the enforced charging policy is applied to the data flows to generate charging information.

As such, in some embodiments of the present invention, the following advantages are possible:

- 1) Access charges may be based on metering of data sessions, which may contain several flows, and which in turn may be charged differently (*e.g.* reverse charged, free of charge, *etc.*);
- 2) End users (subscribers) may be allowed to be charged for services provided directly by third parties while also differentiating charges for the access bearer; and
- 3) Charging logic and control of the proper real time metering and accounting mechanism differently per each flow of a specific service type may be enabled.

Such advantages as recited in the claimed invention are simply not attainable with Roberts. While packets may contain a “URL or IP address and port number of the

server” (see paragraph [0021] of Roberts), nothing is cited or found in Roberts that discloses or suggests that packets have **flow parameters**, as claimed.

Per the above, Roberts fails to disclose or suggest all of the features of the above-rejected claims under 35 U.S.C. § 102(e). Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 5, 8-10, 15, 18-20, 22 and 24 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Roberts in view of Schweitzer et al. (U.S. Publication No. 2002/0013849). Claims 22 and 24 have been cancelled without prejudice or disclaimer. Claims 5, 8-10, 15 and 18-20 depend from independent claims 1 or 11 and add further features thereto. Nothing is cited or found in Schweitzer et al., which generally discusses “session reconstruction in a network environment” (paragraph [0004]), that overcomes the deficiencies of Roberts discussed above with respect to the independent claims. Thus, the arguments above with respect to the independent claims also apply to claims 5, 8-10, 15 and 18-20.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Claims 2, 6, 12 and 16 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Roberts in view of Jogalekar (U.S. Patent No. 7,002,977). Claims 2, 6, 12 and 16 depend from independent claims 1 or 11 and add further features thereto. Nothing is cited or found in Jogalekar, which generally discusses “policy based

accounting and billing systems and methods” (column 1, lines 9 and 10), that overcomes the deficiencies of Roberts discussed above with respect to the independent claims. Thus, the arguments above with respect to the independent claims also apply to claims 2, 6, 12 and 16.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Claims 3 and 13 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Roberts in view of Gai et al. (U.S. Patent No. 7,185,073). Claims 3 and 13 depend from independent claims 1 or 11 and add further features thereto. Nothing is cited or found in Gai et al., which generally discusses “a method and apparatus for applying high-level, quality of service policies at dissimilar computer network devices” (column 1, lines 12-14), that overcomes the deficiencies of Roberts discussed above with respect to the independent claims. Thus, the arguments above with respect to the independent claims also apply to claims 3 and 13.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Claims 4 and 14 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Roberts in view of Hundscheidt et al. (U.S. Patent No. 7,369,541). Claims 4 and 14 depend from independent claims 1 or 11 and add further features thereto. Nothing is cited or found in Hundscheidt et al., which generally discusses “a method, network node, router, serving node and system for performing multicast transmission in a

telecommunication network” (column 1, lines 8-10), that overcomes the deficiencies of Roberts discussed above with respect to the independent claims. Thus, the arguments above with respect to the independent claims also apply to claims 4 and 14.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Claims 7 and 17 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Roberts in view of Chaskar (U.S. Publication No. 2002/0122432). Claims 7 and 17 depend from independent claims 1 or 11 and add further features thereto. Nothing is cited or found in Chaskar, which generally discusses “a method and apparatus for encoding and decoding pause information, especially with respect to digitized audio” (paragraph [0001]), that overcomes the deficiencies of Roberts discussed above with respect to the independent claims. Thus, the arguments above with respect to the independent claims also apply to claims 7 and 17.

Accordingly, it is respectfully submitted that the rejection is overcome and respectfully requested that the rejection be withdrawn.

Conclusion

For at least the reasons presented above, it is respectfully submitted that claims 1-21 and 23, comprising all of the currently pending claims, patentably distinguish over the cited art. Accordingly, it is respectfully requested that the claims be allowed and the application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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Enclosure: Reference Figure

